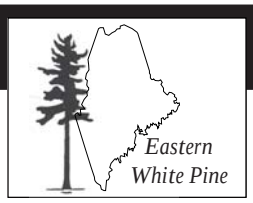
2003 Forest Health Highlights

Maine



January 2004

The Resource

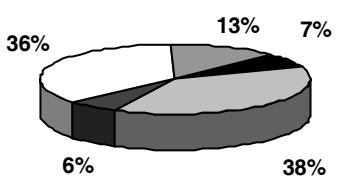
Maine's forests provide much of the raw materials to fuel the State's mills and serve as the backdrop for the recreation industry. These forest-based industries employ more than 12 percent of Maine's workforce and generate over 11 percent of the State's payroll. The overall annual contribution of the forest resource to Maine's economy exceeds $8.5 billion. The forests of the State also provide watershed, environmental, wildlife, and recreational benefits. Forested parks and individual shade trees provide similar amenities in urban and suburban settings.

90% of the State is forested (17,689,000 acres)

Of the forested area:

- **95.7% timberland**
- **4.3% noncommercial or reserved forest land**

Major Forest Types:



- white/red pine/hemlock (7%)
- northern hardwoods (38%)
- other (6%)
- spruce/fir (36%)
- ash/birch (13%)

Special Issues

The annual collection of Forest Inventory and Analysis data for long-term **forest inventory and monitoring**, using a standard national plot design and core measurements, has been underway for 5 years in Maine. The survey integrates the traditional forest inventory with the Forest Health Monitoring Program to assess forest condition, including trees, soils, lichens, and ozone bioindicator plants. Additional data is collected to address local issues ranging from specific pest impacts to quality of wildlife habitat.

Most trees damaged by the **ice storm of 1998** now show significant recovery of affected crowns. As one of the final phases of the impact assessment work of the 1998 ice storm, preexisting ground transects in Buckfield, Liberty, and Epping were located and associated tree condition reassessed on over 1,300 trees during February and March 2003. Even in the most heavily damaged areas, trees on average now have 40 to 75 percent of the crowns they had prior to the ice storm. Results indicate that crown recovery was due predominantly to sprouting and that white ash and yellow birch had the highest rates of crown recovery, while trembling and bigtooth aspen had the least. Mortality rates were relatively low except for paper birch, bigtooth aspen, and trembling aspen, and there was only minor impact on softwood species.

There are currently concerns over threats to the forests from recently introduced pests. The **hemlock woolly adelgid**, which is causing mortality of eastern hemlocks in the eastern United States, was inadvertently imported into Maine on a shipment of infested nursery stock in April 1999; efforts continue to destroy infested trees. Additional infested plantings in York and Cumberland Counties were discovered in 2003. Also in 2003, adelgid infestations were found for the first time in native Maine hemlocks, across a 1,500-acre area in Kittery and York in southern York County. The infestation appears to be less than 2 years old and has only been detected at trace to light levels. Crews continue to delimit the infested area and are surveying additional sites. Media alerts were generated to inform the public of the potential threats from this pest. A project to slow the adelgid's spread is being implemented in 2004.

The **European pine shoot beetle**, a pest of pine, was recently discovered in northern New Hampshire, Vermont, and Maine. The Maine Forest Service and USDA APHIS PPQ have been conducting joint annual spring trapping surveys since 1999 to detect the beetle in Maine. Several beetles have been trapped in funnel traps in Franklin County and northern Oxford County since 2000; both counties are under a regulated quarantine. No beetles nor damage symptoms were seen on trees during scouting surveys of red pine plantations in areas where the beetles were trapped. Bark management protocols have been developed to reduce the risk of spreading this pest on bark mulch to safeguard the pine milling industry.

Special Issues cont.

The Casco Bay region northeast to the Penobscot River continued to support moderate to high population levels of the **browntail moth**, another introduced insect. Low winter temperatures slowed expansion to inland areas, but coastal lands remain heavily infested. Webs collected to assess winter mortality showed that those located 5 miles or more from the coastline exhibited 90 percent larval mortality, while webs adjacent to the ocean had little if any winter losses. Aerial control projects against the browntail moth were not conducted by municipalities in 2003 due to mixed landowner acceptance in prior projects.

No **gypsy moth** defoliation was recorded in 2003. Parasites, virus, and the fungus *Entomophaga maimaiga* continued to keep the gypsy moth population at low levels throughout southern Maine. The 2003 fall egg mass survey indicates that the population will remain at low levels in most locations next season.

Heavy defoliation by the **birch skeletonizer** occurred over most of northern and eastern Maine, covering 750,000 acres. Damage to hardwoods from other insects was also evident, including the **arborvitae leaf miner**, **locust leafminer**, **oak leaftier**, **oak skeletonizer**, and **oystershell scale**.

Populations of **balsam woolly adelgid** appear to have lessened in 2003 as a result of winter mortality associated with last winter's low temperatures. New damage should be lower this coming year than in the past 7 years. Mortality of fir resulting from a combination of adelgid damage and past drought was very striking in areas located south of Millinocket and is likely to continue for a few more years.

Larch mortality has occurred on over 5,000 acres due to drought, defoliators, and bark beetles. The quarantine for **European larch canker** is still in effect along eastern coastal areas, with no evidence of spread in 2003. **Butternut canker**, first reported in Maine in 1993, has now been located throughout the State, with the exception of Washington County. **Beech bark disease** and **Dutch elm disease** continue to be a chronic problems.

There was no defoliation detected from the **eastern spruce budworm** again in 2003; the population remains very low. The condition of many of Maine's central and eastern **coastal spruce stands** continued a gradual decline in 2003. Spruce beetle has been the most immediate cause, along with drought, eastern dwarf mistletoe, wind, limited stand management, and shallow, rocky soils.

Regional Surveys

National Forest Health Monitoring Program

Interest in regional forest condition prompted the implementation of the National Forest Health Monitoring Program. The program's objective is to assess trends in tree condition and forest stressors. All of the New England States have been involved since the program was initiated in 1990.

Results indicate that there has been minimal change in crown condition in the last 14 years, with 95 percent of trees greater than 5 inches diameter having normal crown fullness, about 85 percent with little or no crown dieback, and 70 percent showing no measurable signs of damage. The most common damage was decay indicators, which were more evident on hardwoods than softwoods. This is particularly evident in the northern and eastern regions of the State, where 25 percent of the hardwood basal area is affected, especially beech. Additional surveys indicate there are concerns for individual species such as ash, butternut, and hemlock due to various damage agents.

Forest Health Monitoring Sites

For More Information

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State and Private Forestry